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Aluminum Bronze A-1 Electrode

◆ INTRODUCTION

Aufhauser Aluminum Bronze A-1 Electrode is designed for joining and surfacing on aluminum bronzes with up to 10 % Al and for dissimilar joints between steels and CuAl-bronzes. Aluminum Bronze A-1 produces strong, dense, ductile, and crack-free weld deposits that will work harden under compression. Possesses excellent weldability, stable arc, less spatters, easy to remove slag.

◆ APPLICATIONS

- Joining aluminum bronzes of similar composition, high strength copper-zinc alloys, silicon bronzes, manganese bronzes, some nickel alloys, many ferrous metals and alloys, and combinations of dissimilar metals.
- Overlaying cast iron, steels and copper alloys.
- Ship building, seawater applications, desalination plants, chemical industry, pump parts which are attacked by salt water (propellers, bearings, etc.).
- Surfacing wear- and corrosion- resistant bearing surfaces.

◆ CHEMICAL COMPOSITION

<u>Copper</u>	<u>Aluminum</u>	<u>Manganese</u>	<u>Zinc</u>	<u>Silicon</u>	<u>Lead</u>
Remainder	6.0 – 9.0	0.50*	0.20*	0.10*	0.02*

Note: Copper contains Silver. All values are maximum percentage, unless shown in range.

* these elements included in total other elements.

◆ PHYSICAL and MECHANICAL PROPERTIES

Machinability:	Excellent
Current Used:	DC Reverse Polarity (electrode +)
Position(s):	Flat and Horizontal
Tensile Strength:	68,000 psi
Yield Strength:	28,000 psi
Elongation, in 2 in.:	47%
Brinell Hardness:	115-135
<i>Hardness will vary depending on weld quality and welder expertise</i>	

◆ SPECIFICATIONS MEET or EXCEED

- AWS A5.6 ECuAl-A1

◆ STANDARD SIZES AND DIAMETERS

<u>Diameters</u>	<u>Lengths</u>	<u>Amperage</u>
3/32	12"	80-100
1/8	14"	90-120
5/32	14"	120-140
3/16	14"	120-140

◆ COMMON BASE METALS

<u>UNS</u>	<u>DIN</u>
C 60600	Cu Al5
C 61000	Cu Al8
C 68700	CuZn20Al1

Copper and its alloys require a relatively high heat input with shortened welding time. Higher preheat temperatures and faster welding rates than for steel are necessary.